



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/820,845

04/09/2004

Kwan-Hee Lee

1514.1037

8679

49455 7590 06/12/2008

STEIN, MCEWEN & BUI, LLP  
1400 EYE STREET, NW  
SUITE 300  
WASHINGTON, DC 20005

EXAMINER

HINES, ANNE M

ART UNIT

PAPER NUMBER

2879

MAIL DATE

DELIVERY MODE

06/12/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/820,845	<b>Applicant(s)</b> LEE, KWAN-HEE	
	<b>Examiner</b> ANNE M. HINES	<b>Art Unit</b> 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 24-28 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-28 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7-9 and 24 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

The amendment filed on February 1, 2008, has been entered and acknowledged by the Examiner.

Claims 1-9 and 24-28 are pending in the instant application.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 7, 9, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Cho (US 2002/0043928) (of record).

Regarding claim 1, Cho discloses an organic electroluminescent display device comprising a substrate (Figs. 3A-F, 110; Page 2, Paragraph [0024]); a lower electrode formed on the substrate, the lower electrode having a planar upper surface at a first step difference above the substrate (Figs. 3A-F, 120; Page 2, Paragraph [0024]); a pixel define layer formed on the substrate and covering one portion of the lower electrode while exposing another portion of the lower electrode, the pixel define layer having an upper surface at a second step difference above the substrate (Figs. 3A-F, 140; Page 2, Paragraph [0024]); an organic thin film layer formed on the organic thin film layer (Figs. 3A-F, 160; Page 2, Paragraph [0024]), wherein the second step difference of the pixel

define layer is not greater than the first step difference of the lower electrode (Figs. 3A-F, 120 & 140).

Regarding claim 2, Cho further discloses wherein the pixel define layer is a photosensitive resin (Page 2, Paragraph [0024]).

Regarding claims 7 and 9, Cho further discloses wherein the lower electrode comprises a transparent electrode material of ITO (Page 1, Paragraph [0005]; Page 2, Paragraph [0026]).

Regarding claim 24, Cho further discloses wherein the second step difference of the pixel define layer is less than or substantially equal to the first step difference of the lower electrode (Figs. 3A-F, 120 & 140).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cho (US 2002/0043928) (of record) in view of Arnold et al. (US 7038373).

Regarding claim 8, Cho teaches the invention of claim 7, and wherein the lower electrode of a bottom emitting OLED is a transparent electrode. Cho fails to teach wherein the lower electrode is a reflective electrode of a material from the group consisting of Al, Al/ITO, Cr, Pt, Au, Ag, Ag/ITO, Al/IZO, Pd, Ni, and an alloy film thereof.

In the same field of endeavor of organic electroluminescent devices, Arnold teaches wherein an OLED is provided as a top emitting with reflective lower electrode or a bottom emitting device with a transparent lower electrode, thus exemplifying recognized equivalent structures of the OLED in the art. Arnold further teaches wherein the reflective lower electrode material is chosen from the group consisting of Au, Pd, or Pt (Column 7, lines 43-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the OLED of Cho as top emitting with a reflective lower electrode of Au, Pd, or Pt instead of as bottom emitting, since the selection of any of these known equivalents would be considered within the level of ordinary skill in the art as evidenced by Arnold's teaching.

#### ***Allowable Subject Matter***

Claims 25-28 are allowed.

Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding independent claim 25, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 25, and specifically comprising the limitation wherein a buffer pattern between the lower

electrode and the substrate which has a predetermined thickness sufficient to reduce a difference between the first and second step differences.

Regarding claims 26-28, claims 26-28 are allowable for the reasons given in claim 25 because of their dependency status from claim 25.

Regarding claim 3, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 3, and specifically comprising the limitation of a buffer pattern between the lower electrode and the substrate which has a predetermined thickness sufficient to reduce a difference between the first and second step differences.

Claims 4-6 are allowable due to their dependency status from claim 3.

### ***Response to Arguments***

Applicant's arguments filed February 1, 2008 have been fully considered but they are not persuasive.

With regard to claim 1, Applicant argues that the pixel define layer has a non-planar upper surface and that a portion of this non-planar upper surface has a step difference that is greater than the step difference of the first electrode above the substrate.

The Examiner respectfully disagrees. Claim 1 requires that the pixel define layer have a planar upper surface at a second step difference above the substrate and that the second step difference is not greater than the first step difference of the first electrode. The pixel define layer has multiple planar surfaces on the upper side that

qualify as an upper surface (planar is defined as: "of, relating to, or lying in a plane"<sup>1</sup>); furthermore, the claim does not require all of the upper surface of the pixel define layer to have a step difference not greater than the first step difference, only that it have *an* upper surface that is both planar and has a step difference not greater than the first step difference. As such, the pixel define layer of Cho meets the claim 1 requirement and the rejection of claim 1 is maintained.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

---

<sup>1</sup> Merriam-Webster Online Dictionary

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Anne M Hines/  
Patent Examiner  
Art Unit 2879

/Nimeshkumar Patel/  
Supervisory Patent Examiner, Art Unit 2879